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# THE HINDU

## On foxtail and pearl millets



Foxtail millet is considered a warm food. ( *It is called as Italian Millet in English, Kaon in Bengali, in Gujarati it is known as Kang, in Hindi it is called Kakum, in Kannada it is Navane in Marathi it is again known as Kang or Rala, in Oriya it is Kanghu, Kangam, Kora, in Punjabi it is Kangni, in Tamil it is Tenai and in Telugu it is called Korra .* ) The grain offers a wide range of nutritional advantages over other foods, especially rice. It has the highest percentage of protein, minerals and vitamins among all foods. Compared to rice, this millet contains five times more vitamin B1 and four times more vitamin B2. Calcium content is 60 per cent more and has good iron content.

It is also rich in fibre. Pearl millet

(*English : Spiked Millet/ Pearl Millet, Bengali : Bajra, Gujarati : Bajri, Hindi : Bajra, Kannada : Sajje, Marathi : Bajri, Oriya : Bajra, Punjabi : Bajra, Tamil : Kambu, Telugu : Sajja.*)

It is a good source of dietary fibre and phytochemicals and is recommended for diabetic foods. Pearl millet roti recorded the lowest glycemic response in diabetic volunteers.

Considered a cool crop and known for its delicious rotis, it is also considered a great source of nutrition. At 361 k.cal of energy per 100 grams, it tops the list of energy-giving grains. It has 132 mg of carotene per 100 gms. Rice contains 0 carotene.

Carotene is the most sought after micro nutrient. Pearl Millet offers this vital vitamin at no additional cost.

It is rich in protein and helps to build cells, body fluids, antibodies and other parts of the immune system. It is also rich in iron, which is an essential element for formation of haemoglobin of red cells of blood.

Good source of fibre. The dietary fibre is essential to retain water content in the body. Helps in digestion and reduces constipation. It also reduces incidence of coronary heart disease, type II diabetes and obesity. Offers high energy, keeps you active.

*(M.J. Prabu is The Hindu's Agriculture correspondent. He writes the popular Farmer's Notebook. Write to him at prabu.mj@thehindu.co.in*

### ***RECIPE: FOXTAIL MURUKKU***

#### ***Ingredients:***

***Bengal gram flour: 250 gms.***

***Foxtain millet flour: 500 grams***

***Cumin Seeds : 10 gms***

***Chillipower : 25 gms***

***Sesame : 25 gms***

***Oil : 500 ml***

***Salt to taste***

#### ***Preparation Method:***

***Seive both the flours together. Add cumin seed salt, chilli power, Sesame seeds and mix well. Heat 50 ml oil and pour the hot oil into this mixture. Mix well with a spoon. Make into stiff dough using hot water. Make murukku by suing murukku maker. Heat 500 ml of oil in a pan and deep fry murukku until they turn brown.***

#### ***Pearl millet rice:***

#### ***Ingredients:***

***Pearl millet - 1/2 cup (use broken (Pearl Millet)***

***Water 2 cups.***

***Note: Sprinkle little water over pearl millet and leave it for 15 minutes. Then grind it in a mixer to make it coarse.***

### ***Preparation method:***

***Rinse the Pearl millet well. Boil 2 cups of water in a thick bottomed vessel when it starts to boil and Pearl millet. Let it boil and cook. Cover and cook in low medium flam. Stir in between to prevent it sticking to the bottom. At one stage the millet will become soft absorbing all the water. Serve with raw onion or pickle of your choice or with any side dish or butter milk of your choice.***

### **Deforestation hits monsoon rains, says study**

Widespread deforestation, especially in the northern high latitudes, takes a toll on the monsoon across the northern hemisphere, with rains over India particularly badly affected, according to a new study from researchers at the Indian Institute of Science in Bangalore.

By the 1750s, only about seven per cent of the global land area had been cleared for agriculture and that proportion has since risen to around one-third.

GovindasamyBala, a professor at the IISc'sDivecha Centre for Climate Change, along with post-doctoral researcher N. Devaraju and a doctoral student, AngshumanModak, used a climate model to investigate the effects of large-scale deforestation. With the climate model, they could simulate what happened when extensive deforestation took place across the whole globe, just in the northern high latitudes, only in temperate areas as well as when it was restricted to the tropics.

Such deforestation reduced rains in the monsoon regions of the northern hemisphere. India was affected the most, with global deforestation producing an 18 per cent reduction in its summer monsoon rains, the scientists noted in a paper in the *Proceedings of the National Academy of Sciences*.

On the other hand, the deforestation led to moderately increased rains over South Africa, South America and Australia in the southern hemisphere.

The study showed that when forests in the northern high latitudes were removed, more sunlight was reflected back into space and this region cooled sharply.

### **On the brink of change**

Engineers are creating giant pyramids of ice in the drought-hit Indian Himalayas to see if the melt water they release can help solve water shortages during the region's dry season, villagers of the high desert of Ladakh in India's Jammu and Kashmir state used to harvest bountiful crops of barley, wheat, fruits, and vegetables in summer.

But for years, the streams have run dry in spring, just when farmers needed water to sow seeds. They had water, when it wasn't needed, during the rest of the year, such as in winter, when Ladakhis let water gush from taps to prevent pipes from freezing and bursting.

Villagers blame climate change for causing glaciers to shrink by melting them faster than before.

To resolve the water-shortage problem, Sonam Wangchuk, a mechanical engineer, and his team of volunteers are building a gigantic vertical block of ice in Phyang, nine miles from Leh, the capital of Ladakh. When spring comes and the artificial glacier melts, farmers will have flowing water.

### **Block of ice**

This ingenious method stores water without the need for concrete water storage tanks or dams. While it won't stop glaciers from shrinking, it could help people adapt to a warming world.

Last winter, Wangchuk built a six-metre-high prototype to test his idea. It stored 150,000 litres at 3,170 metres, the lowest altitude in Leh valley. This, he said, proved ice pyramids can be built anywhere in the region. The frozen cone resembles Buddhist mud stupas, and Wangchuk was quick to come up with a name for them — ice stupa. This winter, he was encouraged to attempt a 30-metre-high pyramid of ice. But the cost of piping water from the Phyang stream, 1.5 miles away, was an exorbitant \$100,000. Unperturbed, he raised the money on a crowd-funding platform and work began on January 21.

The site was waterproofed with clay, so when the ice stupa melted, water would not seep into the desert sand. Sprinklers sprayed water from above, and the frigid wind froze the droplets as they hit the ground. A cone of ice built up slowly but steadily. With only two weeks of winter left, time is running short. The stupa will likely be no more than 15 metres high when completed, half the size of the planned 30 metres.

“This year was the first time, so there were complications and delays,” said Wangchuk. “We wanted to achieve two things — to show how to make a stupa and how to green a patch of desert. We want to create orchards and greenhouses for vegetables. It's difficult to say how many people will eventually benefit. Phyang village has only 2,000 people. But there'll be enough water for many more. This is an economic as well as ecologic[al] activity.”

### **Logistics**

To make so many ice pyramids, the only additional investment is the pipeline. Wangchuk said: “We need more pipes so we can extend it farther and farther. It will take another \$100,000 to make the other stupas.” Once the pipes are laid, frozen ice pyramids can be built year after year without pumping in more money. “The capital cost of infrastructure is Rs.0.025 per litre. After that, the water is free. The underground pipes will last a hundred years.” Wangchuk thinks the only way of dealing with the effects of climate change in Ladakh is to build “stupas clubbed with small reservoirs that hold rainwater where it can’t freeze. People say there’s less and less snow, but there’s more precipitation in the form of rain. We need some way of holding water in the high mountains and then form ice stupas. The scope will become smaller if streams have less and less water.” But for now, the desert around the 3,500-metre-high Phyang will turn green in summer, as water flows for the first time in many years.— © Guardian Newspapers Limited, 2015

### **Coconut producers’ company to come up in Tirupur**

In a significant move to enhance capacity building, value-addition and market linkages, about 1,000 coconut farmers from Udumalpet and Madathukulam blocks are coming together to float a ‘coconut producers company.’

The ‘producers’ company’ will be first registered under the Company’s Act with a stipulated size of 10 farmers with the remaining farmers to be inducted subsequently.

### **Operational aspects**

“We have commenced the initial steps towards floating the company by constituting a committee to discuss the operational aspects and other modalities,” R. Thirumalaisamy, one of the farmers from the region, told *The Hindu*.

Mr. Thirumalaisamy, who is also the president of the Amaravathi Farmers Club which won the third Best Farmers Club award constituted by Nabard last year, said that the main objective behind constituting the company was to realise optimal value from their produces through utilisation of latest farming practices and marketing of value-added products under a consortium approach.

“Unless the farmers come together as an organisation, it will be difficult in the coming days to sustain economic viability not only for adopting progressive technology but also in using high yielding varieties of farm inputs like seeds/seedlings and fertilizers.

“Due to the present fragmentation of the land holdings, farmers are finding it difficult to go for value-addition of their produces individually,” agrarian community added.

Once the 'producers' company' was formed, the farmers in the said two blocks are thinking of coming out with value-added products like coconut powder, packaged tender coconut water, and coconut oil.

“We will also be thinking of brands to market the products,” Mr. Thirumalaisamy said.

Initially, the farmers will contribute Rs 1,000 into the company as their share. When the profits come, certain portion of the gains will be shared by the members and the rest will be pooled towards share capital/reserves.

The formation of the company will enable the farmers to get assistances from Nabard.

### **Working capital**

“We will facilitate extension of working capital and term loans for various activities and grants for functional expenses of the company,” Nabard district development manager V. Sriram said.

### **Quick sale of maize keeps farmers happy**



Members of the Farmers Interest Group of M. Kalathur have set a trend in marketing maize. All 20 members of the group, who harvested the produce recently, marketed it immediately at their door-steps thanks to direct purchase by traders. This is the first time that the maize is being marketed directly without the intervention of middlemen.

It avoids the expenditure of transit of the produce, says R. Chandrasekaran, Deputy Director of Agriculture Marketing and Agri Business. He said a total of 7,100 kg of the produce was sold for Rs.85,200 at the rate of Rs.12 a kg.

“The price was at least Rs.1.50 over and above (per kg) the wholesale market price,” said Saravanakumar and PushpaSivakumar, both Assistant Directors of Agri Business.

They said the sale would motivate the other 20 groups in Thottiyam, Mannachanallur and Pullampadi blocks.

## **She climbs trees for her livelihood**



She earns Rs. 1,600 a day by charging Rs. 40 a tree thanks to M. S. Swaminathan Research Foundation and the board.

“I used to climb only 15 trees a day and earned Rs. 600 a day. But now I could climb 40 trees a day with the help of the tree climbing equipment. It is easy to climb the tree with this unit. Moreover, the board has extended the insurance cover to the tune of Rs. 2 lakhs. I need not pay any premium,” said Vinodhini.

The MSSR Foundation had trained 120 persons including 18 women from Thethagudi, Kariyapattinam and Thanikottakam under a programme to retaining youth in agriculture, launched by the Ministry of Agriculture.

V. Selvam, Director, Integrated Coastal Zone Management Project, MSSRF, said the aim was to focus on coconut plantation as well as harvesting.

None is willing to climb coconut tree. However the equipment has come as a boon to youths in rural areas as they could earn Rs. 30,000 a month.

Response from the women was notable since 18 women have undergone training for six days, organised by the MSSRF.

The participants were taught on raising coconut plants, harvesting as well as marketing strategy.

The president of Thopputhuraipanchayat, P.Giridharan, the president of Farmers Association, T.V.Rajan, R. Jeyakumar and G. Rajavelan, training co-ordinators of MSSRF, attended the valedictory of Friends of Coconut Tree Training organised at Thopputhurai near Vedaranyam on Monday.

## **e-Panchayatsprogramme to be launched in Nizamabad**

The e-panchayat programme of Telangana government aimed to provide citizen's services in villages will be launched at Domakondamandal headquarters village in Nizamabad district, said Information Technology and Panchayat Raj Minister K.T. Rama Rao on Tuesday.

The programme will be initially extended to 150 mandals and thereafter to the rest of the State in a phased manner, he announced while reviewing the progress of National Optic Fibre Network works in the State.

Launch of e-Panchayats will take the fruits of e-Governance project to the most remote villages and simplify the delivery of many citizens' services to the rural population, Mr. Rao said.

### **One-stop shops**

They will serve as one-stop shops for payments related not only to consumer services but also many taxes.

The centres could facilitate cash transfers pertaining to multiple schemes and welfare programmes such as Aasara and MNREG works, he said.

### **To benefit ryots**

By online dissemination of information pertaining to prices of agricultural produce and employment opportunities, the centres will benefit farmers as well as unemployed youth who are now compelled to visit the nearest city for such information.

Already, discussions have been held with various service providers, agents and software developers for designing e-Panchayat.

The plan is to use VSAT technology or fibre optic cable network for connectivity.

He directed officials to provide infrastructure and other facilities for the centres as also to choose and train educated women of 18 villages in Domakonda in running the e-Panchayats.

As a next step, the services will be extended to all 36 mandals of the district when the optic fibre network connectivity works will be complete.

Mr. K.T. Rama Rao asked officials to expedite the networking and complete the works for Nizamabad, Ranga Reddy and Khammam districts by June 2 so that e-Panchayats could be launched there.

**‘Biotechnology is a tool to beat food crisis’**



Potential of biotechnology should be integrated into farming to augment food production, said M. Maheswaran, biotechnologist and director of research at Tamil Nadu Agricultural University.

Addressing a two-day national seminar on 'New Frontiers in Agricultural Bio-Technology' at the Kerala Agricultural University, Mannuthy, on Tuesday, he stressed the need to explore advancements in biotechnology, especially plant breeding and genetics as well as plant protection disciplines to face the challenges of food crisis.

"Biotechnology should not be seen, learnt and practiced in isolation, but in tandem with other branches. Proper use of biotechnology tools is very vital. Scientists should strive to learn not only advanced technology but also to realise the right way to use them," he said.

T.R. Gopalakrishnan, KAU director of research, in his presidential address highlighted the need to understand and practice modern technologies as scientific tools for enhancing and sustaining agricultural productivity.

"The self-sufficiency in food grain production in the country did not happen overnight. It happened because of a series of technological inputs like improved varieties, plant health management inputs and soil health management," he said.

He opined that biotechnology has become an integral part of agricultural development. "The shift in cropping pattern, from high volume crops to high value crops will help economic empowerment of farmers and the role of biotechnology in this area is vital," he said.

The seminar, organised by KAU's Centre for Plant Biotechnology and Molecular Biology (CPBMB), with the support of State Planning Board is participated by researchers from different State Agricultural Universities, research organisations and industrial houses.

**State says cheers to neera**



The growing divide between the Ministries of Agriculture and Excise notwithstanding, neera is emerging as the soft drink in vogue in the State.

Opinion is divided over whether all coconut farmers should be allowed to tap neera or only those with licences issued by the Excise department should be allowed to do so.

### **Popular at Games venues**

The differences of opinion aside, the market for the unfermented, sweet sap from coconut flowers was successfully tested at the National Games in the State.

The five stalls at five venues of the National Games in Thiruvananthapuram saw sales moving up to an average of 100 litres per day per stall, said the chairman of Palakkad Coconut Producer Company, Vinodkumar P. The only problem they faced was the shortage of neera. There wasn't enough neera for sale at all Games venues, he said.

The sale of commercially produced neera and value-added food products that use the produce as raw material was launched in the State last year.

“The Kaippuzha Coconut Producer Company in Kollam district sees demand for at least 25,000 to 30,000 bottles of 200 ml each per day in the immediate future,” said chairman Shahjahan Kanjiravilayil. He said the Kaippuzha company was the first to establish a processing plant for neera and had just sent out its first batch of more than 1,500 bottles this week.

The packing volume is expected to increase as neera production picks up. At present, the Kaippuzha company was tapping nearly 1,000 trees and the number would go up to a total of 3,000 trees, which would enable the unit to operate at its full capacity of 1,600 litres per day, he said.

The company has already set up three stalls in different parts of Kollam town and Karunagappally and are looking to open more outlets in the near future.

The Palakkad company has 22 stalls across Kerala, including one at Vyttila Mobility Hub. Sales have touched about 1,000 litres per day. Besides, said Mr. Vinodkumar, neera was a growing favourite for weddings and other family functions. Stalls at exhibitions such as flower shows were another sales booster, he added.

The foundation stone for a neera processing plant and cold storage of the Palakkad Coconut Producer Company was laid at Muthalamada in February this year.

### **Cultivating organic spices in the backyard**



Along with vegetables, spices also need to be cultivated organically, say experts.

Spreading awareness among people about the importance of producing toxin-free spices through organic cultivation was the main thrust of a training programme in homestead water management and organic spice cultivation organised by the National Horticulture Mission in collaboration with the Centre for Water Resources Development and Management (CWRDM) on its campus at Kunnamangalam here.

Around 60 housewives, who are members of the farmers club aided by the National Bank for Agriculture and Rural Development (NABARD), participated in the two-day training programme, which was inaugurated by the Kunnamangalam MLA P.T.A. Raheem on Monday.

### **Water resources**

In various sessions, scientists as well as experts from the centre and the Agricultural Department spoke on how to go about managing the available water resources in a common household for the cultivation of essential spices including ginger, turmeric and pepper.

E. Abdul Hameed, Technical officer of CWRDM, talked about the things to be done while cultivating spices in the backyard.

While CWRDM scientist Dinesh Kumar spoke about the role of spices in the protection of health, K.R Prasannakumar, another expert from the centre, spoke on the role of soil fertility and use of organic fertilizers for spices cultivation.

P. Vikraman, former Principal Agricultural Officer, demonstrated on how to prepare organic fertilizers and pesticides.

The scientists also clarified various doubts raised by the participants during the programme.

One kg of ginger and turmeric rhizomes each as well as five saplings of pepper were distributed free to the participants at the end of the session. CWRDM executive director N.B. Narasimha Prasad presided over the function. CWRDM Training Education and Extension Division (TEED) head Kamalam Joseph and NABARD District Development manager K.P. Padmakumar among others spoke. Details about organic spices cultivation can be had from the organisers. Ph: 9447276177.

### **State Budget: farmers present 25-point wish list**



Farmers in the region have come out with a 25-point wish list for inclusion in the State budget.

This includes a demand to curb the practice of acquiring agricultural land for industrial purposes by the Karnataka Industrial Areas Development Board (KIADB) besides taking over the land belonging to sick industries and reallocation of the same to new entrepreneurs to start their venture.

The wish list has been brought out by the State Sugarcane Cultivators' Association which has urged the government to ensure income and social security for farmers and prevent them from taking recourse to suicides to escape the tyranny of the market.

KuruburShanthakumar, State president of the association told *The Hindu* that they want the State government to increase allocation for the agriculture sector to Rs. 40,000 crore.

Drawing attention to the recommendations of Dr. Rangarajan Committee report, Mr. Shanthakumar said the government should abolish the rule banning opening of new sugar factories in a 25-km radius of an existing sugar mill.

Dubbing the present system of calculating the minimum procurement price for a crop as unscientific, the association demanded additional support price from the State government to help the farmers. The additional support price would not be required if the government adopted the recommendations of Dr. Swaminathan Committee report on price fixation.

The association said a rule should be brought to take over or nationalises such private sugar mills found to repeatedly default in clearing arrears due to the sugarcane farmers.

The present practice of releasing Rs. 3,000 per acre in case of sugarcane damaged due to natural conditions was dubbed as unscientific and the association wanted the government to compensate the farmers for the actual loss incurred by them.

A key demand of the farmers – being aired since many years – is a pension policy for the agricultural workers and farmers. “All farmers aged above 60 should be eligible for State pension as a social security measure,” said the association.

Referring to the constitution of the agricultural price commission, Mr. Shanthakumar said, the body should have farmers as representatives.

### **Rural youth to take to modern machinery**

Rural youth groups are all set to take modern machinery to agriculture across Vellore district.

In a bid to encourage mechanisation in farming, the Agricultural Engineering Department has formed 40 rural youth groups, two in each of the 20 blocks in the district, and has started to provide modern farm implements and machinery at subsidised cost.

Through this, the youth groups can provide the machinery / implements for rent to farmers. The State government had allotted Rs. 410 lakh for the scheme for the district.

“Each group has a minimum of eight members and up to 10 to 12 members. We provide the groups with equipment at 80 per cent subsidy and also train them in the operation and maintenance of the machinery,” M.S. Inbanathan, executive engineer, Agricultural Engineering Department, Vellore.

Farm implements and machinery including tractors, cultivators, equipment used for de-weeding, sowing and seed drillers are provided to these groups. The scheme took off on Monday with four rural youth groups receiving the machinery.

### **Subsidy**

Agricultural equipment worth Rs. 40 lakh with subsidy of Rs. 32 lakh was given to four groups from Jolarpet (Jolarpet block), Balamathi (Vellore), Kaatupudur (Kaniyambadi) and Reddivalam (Nemili) villages, a press release said.

“All 40 groups will receive the equipment by March 31. The eligibility criteria for the members include age less than 35 years, belonging to a rural area and minimum educational qualification of class VIII,” he added.



### [Eating peanuts may help you live longer: Study](#)



Eating peanuts may lower your risk of dying from a heart attack, a new study has claimed.

Researchers at Vanderbilt University in US and Shanghai Cancer Institute in China examined the association of peanut and nut consumption with mortality among low-income and racially diverse populations and found that intake of peanuts was associated with fewer deaths, especially from heart disease.

“Nuts are rich in nutrients, such as unsaturated fatty acids, fibre, vitamins, phenolic antioxidants, arginine and other phytochemicals,” said senior author

Xiao-OuShu, associate director for Global Health at the Vanderbilt-Ingram Cancer Centre (VICC).

“All of them are known to be beneficial to cardiovascular health, probably through their anti-oxidative, anti-inflammatory and endothelial function maintenance properties,” Shu said.

While research has previously linked nut consumption with lower mortality, those studies focused mainly on higher-income, white populations.

The new study was the first to discover that all races – blacks, whites and Asians alike – could potentially increase heart health by eating nuts and peanuts.

“In our study, we found that peanut consumption was associated with reduced total mortality and cardiovascular disease mortality in a predominantly low-income black and white population in the US, and among Chinese men and women living in Shanghai,” Shu said.

Participants included more than 70,000 Americans of African and European descent from the Southern Community Cohort Study (SCCS), who were mostly low-income, and more than 130,000 Chinese from the Shanghai Women’s Health Study (SWHS) and the Shanghai Men’s Health Study (SMHS).

Peanut consumption was associated with decreased total mortality, particularly cardiovascular mortality (ie, 17-21 per cent reduction in total mortality, and 23-38 per cent reduction in cardiovascular mortality for the highest quartile intake group compared to the lowest quartile group) across all three racial/ethnic groups, among both men and women.

Because peanuts are much less expensive than tree nuts, as well as more widely available to people of all races and all socioeconomic backgrounds, increasing peanut consumption may provide a potentially cost-efficient approach to improving cardiovascular health, Shu said.

“The data arise from observational epidemiologic studies, and not randomised clinical trials, and thus we cannot be sure that peanuts per se were responsible for the reduced mortality observed,” said William Blot,

associate director for Cancer Prevention, Control and Population-based Research at VICC and a co-author of the study.

The study was published in the journal JAMA Internal Medicine.

### **Gujiya, Thandai, Matthi: Top 5 Holi recipes you should make**



What's a Holi without some 'mithai'? But be a little cautious and try cooking some healthier sweets in your home kitchen, suggests Indian masterchef Sanjeev Kapoor, as he gives out some easy recipes:

#### **Gujiya**

Ingredients:

For the filling

Khoya/mawa: 500 gm

Sugar/freenatura diet sugar: Six tablespoons

Desiccated coconut: 3¼ tsp

Cashewnuts (blanched and chopped): 15 nos

Almonds (blanched and chopped): 15 nos

Raisins: 20 nos

Green cardamom or nutmeg powder: ½ tsp

For the outer covering

Refined flour (maida): Four cups

Salt: ½ tsp

Ghee: Five tbsps + to deep fry

Gujiyamould

#### **Method**

\* Mash the khoya and roast it in a deep pan on medium heat till pink. Take off the heat and let it cool.

\* Add all the other filling ingredients to the khoya and keep aside.



- \* To prepare the covering, sieve flour and salt and rub in five tablespoons of ghee.
  - \* Add enough water and knead into a firm dough. Cover it with a moist cloth and keep aside for 15 minutes.
  - \* Divide the dough into small balls and roll each ball into a small puri of four inches diameter.
  - \* Spread a puri on a greased gujiyamould and fill a tablespoon of the filling mixture on one side.
  - \* Moisten the edges of the puri and fold one side of the mould over the other. Press the edges and remove the excess dough and reuse.
  - \* Prepare all the gujyas and spread on a damp cloth.
  - \* Heat sufficient ghee in a deep pan and deep-fry the gujyas, in batches on medium heat, till golden brown.
  - \* Drain on to an absorbent paper. Cool and store in an airtight tin.
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### **KesariMalaiPeda:**

Ingredients:

Four cups of milk

A few strands of saffron

A pinch of citric acid

Two teaspoons of cornflour, dissolved in two tablespoons of milk

¼ tsp green cardamom powder

10 teaspoons Sugar Free Natura Diet Sugar

Eight almonds, chopped

Method:

- \* Bring milk to a boil in a deep pan and simmer till it reduces to half its original quantity. Add saffron and mix well.
- \* Mix citric acid in two teaspoons of water and add to the thickened milk.
- \* Add dissolved cornflour and stir continuously till the mixture thickens.
- \* Add green cardamom powder and mix well.
- \* Take pan off the heat and stir in Sugar Free Natura Diet Sugar and set aside to cool.
- \* Divide the mixture into eight equal portions and shape them into round pedas.
- \* Sprinkle almonds over the pedas and serve.

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### **Mathhi:**

Ingredients:

Two cups of refined flour

Salt to taste

½ tsp carom seeds

One tbsp dried fenugreek leaves

Five tbsp Nutralite Table Spread

Oil for deep frying

### **Method:**

\* Place the flour in a bowl and add the salt, carom seeds and dried fenugreek leaves and mix well.

\* Add five tablespoons of Nutralite Table Spread and mix well. Add sufficient cold water and knead into hard dough. Cover and rest the dough for 15 minutes.

\* Divide the dough into 24 equal balls and flatten them slightly. Roll each ball thinly into small puri and fold in half and then fold again to make a triangle. Stick a clove at one corner making it appear like a paan.

\* Heat sufficient oil in a kadai. Slide in the mathhis, a few at a time, and deep fry on medium heat till golden and crisp.

\* You can also make these in round shapes. Lightly prick them with a fork so that the mathhis do not rise like puris.

\* Drain on absorbent paper. Cool completely. Store in airtight tins.

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### **Thandai:**

Ingredients:

Full cream milk: 1½ litres

A few strands of saffron

Sugar Free Natura Diet Sugar: Five tbsp

Almonds, blanched and peeled: 25 nos

Cashewnuts, soaked: 20 nos

Pistachios, blanched and peeled: 30 nos

Melon seeds (magaz), soaked: Three tbsp

Poppy seeds (khuskhus), soaked: Three tbsp

Green cardamoms: 8 to 10 nos

Rose petals, dried: 20-25 nos

Cinnamon: 1-inch stick

Peppercorns: 8-10 nos

Method:

\* Bring milk to a boil in a pan. Add saffron and simmer.

\* Grind together almonds, cashewnuts, pistachios, melon seeds and poppy seeds with a little milk to a fine paste.

\* Add this paste to the milk and mix well. Simmer for three to four minutes.

\* Grind green cardamoms, dried rose petals, cinnamon and peppercorns to a fine powder.

\* Add this to the milk and mix well. Add sugarfree natura Diet Sugar and mix.

\* Chill the milk and serve.



## THE TIMES OF INDIA

### **A strawberry treat for strife-torn KarbiAnglong**

GUWAHATI: Assam's strife-torn KarbiAnglong district is now savouring a fruit associated with gaiety and festivity. The district is producing sweet charlie, a variety of strawberry, in abundance.

Known for its fertile terrain and rich flora and fauna, KarbiAnglong is known for its good quality ginger that is widely cultivated and exported. Farmers here have started growing strawberry along with turmeric, papaya, mausammbi, black pepper and oranges.

Farmers in the district are yielding a rich produce of sweet charley strawberries with the onset of the harvest season. The ongoing season is considered the harvest season for the fruit. Neighbouring Meghalaya holds a monopoly over strawberry production in northeast. "The farmers started strawberry cultivation two years ago on a trial basis. We have been observing the commercial feasibility of strawberry cultivation in neighbouring Meghalaya. We saw the success story and decided why not introduce the crop here as KarbiAnglong is a fertile district. Our strawberries taste better than others as well," said JitenSaranphanso of Gin Fed Limited.

A kilo of strawberry is sold for anything between Rs 500 and 800. With the farmers' initiative, groups like Gin Fed and the agriculture department of the KarbiAnglong District Autonomous Council are able to sell their produce directly to the consumers.

Introduced two years ago, the fruit as of now is being cultivated in over 10 bighas in the district alone and is mostly found in Diphu sub-division and Manja. Growers said by the next year, the fruit will be grown in other areas of the district, too.

"It is new in Assam. The growers need to be appreciated for their efforts. Strawberries are commercially feasible and earn reasonable profits for them. The fruit contains anti oxidant properties," said Priyanka Das, scientist at the Assam Agriculture University. The first sapling was bought from Mumbai. The entire growing period takes 90 days. Cultivation starts by November and by February end the fruit begins to ripen. Saranphanso, a strawberry farmer, said the produce could be sent to Nagaland and Guwahati for better commercial feasibility. But in the absence of proper storage facilities the produce is only limited to the district.

## THE HINDU BusinessLine

How public-private partnership can embrace agri-value chain?



Managing agri-business value chain is essential from production to procurement and distribution to consumption to complement a diverse group of agents such as resource provider/supplier, transporter, producer, processor, distributor and marketer. Public-private partnership may induce flexibility in the functioning of the value chain and offer an effective incentive structure to the agents along the chain (see, Chandrasekaran and Raghuram 2014 and Dey 2014 for book review)

### Value chain drivers

Value chain drivers are said to complement and augment system efficiency and responsiveness. Efficiency along the supply chain calls for a robust planning known as Material Resource Planning (MRP). On the other hand, synergy in supplier relationship, facility with respect to choice of location and contract manufacturing decisions of (material) inputs and delivery of service inputs, and inventory management are also important. Besides input

management, managing output is also critical to agri-business value chain. Value-addition through processing of agro-based produce is critical to output management in agri-business. Sourcing is a key driver for an efficient value chain that may be possible either from regulated markets or from focal firm's designate-collected centre or directly from the farm gate. Hence, quality, quantity, price, source and time influence the decision making of a focal firm.

### **Infrastructure – Hard and Soft**

Infrastructure and information technology together contribute to sustain value chain efficiency in agri-business. For example, cold chain – a temperature-controlled supply chain – comprises surface and refrigerated storage for enhancing the shelf-life of fruits and vegetables. However, inadequate infrastructure, rising energy cost, and poor utilisation of storage unit could act as bottleneck for an efficient post-harvest management of agri-produce.

The role of technology in agri-business supply chain is noteworthy. Management information system across the strategic, tactical, and operational levels seeks to map the supply chain layers, viz. planning, collaboration, and execution. This synchronises the value chain activities with the layer-wise processes. For instance, dairy and other processing industries manage to manoeuvre their value chain layer effectiveness deploying adequate resources supported by a robust information system. As a consequence, they are able to optimise cost-benefit metrics embracing a value chain reference model that includes plan, source, make, distribute, and return.

ITC-e-Choupal, utilising information technology, has brought a remarkable advancement in procurement, trading, warehousing, and distribution for commodities such as wheat, soyabean, and tobacco, mobile technology, on the other, adopted by fishermen in Kerala, enhanced price realisation at source reducing price volatility and dispersion in fish prices. Nonetheless, disbursement (by formal institutions) and credit growth has remained an area of concern for agribusiness industries and policy makers as any strain on financial flow can arrest the working of operating cycle and thus, functioning of the value chain.

### **PPP to Chain Integration**

Public-private partnership could bolster to integrate the information flow, physical flow and cash flow. In agribusiness, producer, trader, distributor and customer constitute the value chain. Integrating these three flows is of crucial relevance to value chain stability. While a resilient value chain is warranted from intermediaries, stability of the system is subject to government policies. A stable government with responsive bureaucracy can help create an

innocuous and effective macro environment to instil efficiency in agri-business value chain.

### **PPP Model**

Consider a typical PPP model in value chain. In Rajasthan, StarAgri has constructed an integrated structure for farm produce procurement, storage and distribution. Licensing is critical to start the procurement and distribution activities. For a successful intervention, StarAgri may contract out end-to-end solutions to Farmer Producer Companies (FPCs). For instance, AjaymeruKishanSamruddhi Producer Company in Ajmer incorporated in 2013 that has 2,500 farmers' base with a share capital of Rs.13 lakh. Indian Grameen Services of BASIX has played a key role in capacity building of the FPC. Nabard – being a promoter of Farmers' Club – could be a financial intermediary between FPCs and StarAgri. FPCs could source the inputs from various suppliers at competitive rate and provide to farmers for production and then, bring the produce to private mandi for auction and sell. StarAgri needs to organise the auction and mediate the exchange between FPCs and buyers. Council of State Agricultural Marketing Board and National Institute of Agricultural Marketing may craft the right policy for functioning of this PPP model.

### **Sugar production rises, as do cane arrear**



Sugar mills in India produced 194 lakh tonnes (lt) of the sweetener up to February 28, about 23.6 lt more than at the same time last season (October-September), as per the latest estimates released by the Indian Sugar Mills Association (ISMA) on Tuesday.

The association warned that with lower sugar prices this year, sugarcane arrears, which stand at Rs.14,500crore this year, will likely rise despite the industry's oft repeated demand for an export subsidy on raw sugar being approved by the Centre recently for 14 lt at Rs. 4,000/tonne.

The outstanding payments owed to cane farmers for the 2014-15 season have already surpassed peak arrears of Rs. 13,000 crore last season. For the 7.5 lt exported last season between March and September under the incentive scheme, ISMA expects payments to be made this month.

“The government notification is awaited. Meanwhile, global prices have fallen and demand for raw sugar for export purposes is on the lower and will flow in as and when global prices improve by even 50 points,” it said in a statement.

### **Maharashtra, UP lead the way**

While 511 mills had undertaken crushing operations this season, 455 mills produced 170.43 lt in 2013-14.

Maharashtra, the country’s largest sugar producing State, had 177 mills operating which produced 74 lt, against 129 mills which recorded an output of 57.54 lt last season. Around 49.6 lt had been produced by 118 mills in Uttar Pradesh at the end of February, against 43.4 lt last year. Mills in Bihar produced 4.75 lt this season as compared to 3.73 lt last year.

In Karnataka, 63 mills recorded an output of 32.8 lt as compared to 30.94 lt produced by 56 mills last season. Mills Tamil Nadu, Andhra Pradesh/Telangana and Gujarat registered a decline in output to 4.6 lt, 7.3 lt and 8.4 lt as against 6.5 lt, 7.72 lt and 8.64 lt respectively.

### **Ethanol quandary**

The association said a government condition made it mandatory that mills having ethanol production capacity will need to supply 25 per cent of their alcohol production as ethanol for the blending programme, to be eligible for the export incentive.

It estimated that of 100 cooperative mills in Maharashtra, 60 do not have distilleries and would not benefit from the scheme. Of the rest, more than half had already started supplies.

“The condition will at best impact five to eight sugar mills in Maharashtra who have an opportunity to participate in ethanol supplies against the EoI expected to be floated by OMCs in the latter part of March,” it said.

## Benefits of drinking green tea every day



*Green tea boasts several health benefits and is considered as one of the world's healthiest drinks. Here are a few benefits of drinking green tea every day.*

**Fights cancer:** Researchers have found that drinking green tea every day reduces the risk of cancer. It has polyphenols, an antioxidant that prevents cell damage.

**Fat burner:** It is a known fact that green tea helps in losing weight. Have a cup of green tea with a teaspoon of honey on empty stomach in the morning to witness changes.

**Promotes longevity:** Polyphenols also prevent aging and promote longevity.

**Reduces belly fat:** If you are fantasizing about having a flat stomach, have four cups of green tea every day. Along with the right amount of exercise and following a healthy diet, make it a ritual to drink a minimum of four cups to fight your belly fat.

**Keeps you hydrated:** Even if you are not someone who drinks water at regular intervals, drink a cup of green tea throughout the day. It helps you stay hydrated.

## Best ways to de-stress





*While stress levels are getting higher with busy lives and increasing workloads, here are few simple ways you can de-stress yourself*

With lives getting busier and workload increasing with every day, stress has become a common complaint in most urban professionals.

To stay away from stress, it is important that you **keep your mind off from stressful thoughts for sometime every day**. Think of things that are relaxing, bring in happy thoughts from older times and take a mental vacation.

**If you like to eat, then make sure you give yourself enough time to enjoy your meal properly.** Having a good meal is a good way of distressing yourself. But it is also important that you do it at a slow pace.

**Bring in more celebrations in your life.** Don't wait for someone's birthday party or anniversary to bring some fun in your life. Take your coffee mug to the terrace, take a walk with your dog, and spend some time cracking jokes with your friends.

**Pamper yourself.** Treat yourself with a spa treatment, go shopping or just simply take a day off and stay at home watching your favourite movies or sitcom you loved in your younger years.

## Business Standard

Use falling global food prices as opportunity: Agri expert



With [global food prices](#) falling, countries like India should not be "complacent" but should use this window of opportunity for addressing next spike in food prices, a global economist [Per Pinstrup Andersen](#) said today. When prices are down, the governments should in fact boost investment in rural and agricultural infrastructure as this would help the countries including India to achieve economic growth, eradicate [poverty](#) and tackle next food price rise situation, he said.

Anderson also said that global markets are extremely nervous now and traders are keeping an eye on commodities market for investment. "Global prices have been falling for last three years. Most commodities have fallen by 25 per cent. As global prices are dropping, we are entering into a complacency period like we had towards end of 2004," said Andersen, also a policy maker who won the 2001 World Food Prize.

Countries have "window of opportunity to get ready for next price spike which is going to come", he told reporters.

Asked for how long the current low price trend would continue, he said: "I don't know. I don't see price increase within next short period of time, but it all depends on weather and speculation that comes with weather events."

He also said a research of 16 countries showed that when warehouses are full, prices are falling. When warehouses get empty, prices start rising.

"What you have in warehouses are important indicator of future prices," he said, while talking about his new book 'Food price Policy in an era of Market stability', to be launched tomorrow here, Andersen said.

Noting that higher stocks help check price rise to some extent, Andersen said: "Right now, warehouses are full. There is no particular incentive for prices to go up. But couple of extreme events can change that."

He also said that keeping stocks in physical form is an expensive affairs and the countries should set up a price stabilization fund to address price volatility.

The complacency had cropped up in the [agriculture](#) sector in most countries when global food prices fell by 60 per cent on real term basis between 1975 and 2000-01. At that time, nobody wanted [green revolution](#) and even the [World Bank](#) could not invest in agriculture infrastructure, he added. World food prices fell on real term basis between 1975 and 2000-01. Prices started increasingly slowly later part of 2001 and shot up sharply from mid-2007 and 2008 and much needed price adjustment took place then, he added.

### **Use of Modern Equipments in Fruits Production**

The Government of [India](#) is implementing scheme of Mission for Integrated Development of Horticulture (MIDH) in all states and Union Territories, for the development of horticulture crops including fruit crops like mango, litchi and grapes and spice like saffron. Mission envisages production and productivity enhancement of horticulture crops along with creation of infrastructure for post harvest management and marketing by adopting a cluster approach. The scheme also has provisions for capacity building and skill upgradation of farmers through training and demonstration of latest technologies.

This information was given by the Minister of State for Agriculture Sh. MohanbhaiKundaria in LokSabha today.

## Employment in Agriculture

As per Population [Census](#) 2011, the total number of agricultural workers in the country, comprising of cultivators and agricultural labourers, have increased from 234.1 million (127.3 million cultivators and 106.8 million agricultural labourers) in 2001 to 263.1 million (118.8 million cultivators and 144.3 million agricultural labourers) in 2011.

In order to promote the agriculture sector in the country, Indian Council of Agricultural Research (ICAR) has strengthened, re-structured and prioritized research and development programmes in rice, wheat, maize, millets, fodder crops, oilseeds, pulses, sugarcane, cotton, fiber and horticultural crops through research institutes and All India Coordinated Research Projects (AICRPs)/All India Network Projects (AINPs). Research and development activities for mechanization of farm operations focused on reducing the cost of production and the post-harvest losses in agriculture, enhancing input use efficiency in crops, precision in agriculture techniques and use of Nano-technology.

ICAR's endeavor to promote high quality research in agriculture include 16 consortia research platforms initiated during the 12th Five Year Plan covering almost all facets of the agricultural research. In addition, a major research programme 'National Initiative on Climate Resilient Agriculture (NICRA)' has also been taken to address the sustainability and climate change issues in agriculture.

Government has taken several steps to increase the profitability and employment opportunities in the agriculture sector by improving farm practices, increasing investment, creating rural infrastructure, ensuring timely delivery of credit, technology and other inputs, fostering backward and forward linkages, etc. Furthermore, government fixes Minimum Support Price (MSP) of various agricultural commodities with a view to ensure remunerative returns to the farmers for their produce.

This information was given by the Minister of State for Agriculture Sh. MohanbhaiKundaria in LokSabha today.